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ABSTRACT

The Reading Component of the Minneapolis Schools' 1973-74 Emergency School Aid Act (ESAA) Project was designed to improve reading comprehension among the poorest-reading students in eight desegregating public junior highs and the poorest-reading junior-high-age students in six nonpublic schools. The Reading Component not only met, but surpassed, its objectives for comprehension gain among disabled readers. Objective I stated, in part, that students with pretest comprehension grade-scores of 0-3.9 would show a median of 1.5 months comprehension gain for every month in the ESAA program; in fact, these students achieved a median gain rate of 2.4. Objective II stated, in part, that students entering the Component with pretest scores of 4.0-6.0 would have a median rate of 2.5 months gain per program month; the actual median rate for Objective II students was 3.1. Also, within each separate school, the ESAA students usually surpassed Objective I and II. In every public school approximately 60 percent of the Objective I students exceeded the expected median gain-rate of 1.5. Factors possibly accounting for differences among schools in gain rates were discussed. (Author/DEP)

Minneapolis Public Schools

The Reading Component of the Minneapolis Schools' 1973-74 Emergency School Aid Act Project: An Evaluation

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Independent Contractor

Ideas expressed in this report do not necessarily reflect the official position of the Minneapolis Public School Administration nor the Minneapolis School Board.

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Research and Evaluation Department
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The Reading Component of the Minneapolis Schools' 1973-74 Emergency School Aid Act Project: An Evaluation

Summary

The Reading Component of the Minneapolis Schools' 1973-74 Emergency School Aid Act Project was designed to improve reading comprehension among the poorest-reading students in 8 desegregating public junior highs and the poorest-reading junior-high-age students in 6 nonpublic schools. (See Page 1)

The Reading Component included (a) a staff of 14 teachers, 17 teacher aides, and a full-time Reading Coordinator; (b) a curriculum consisting of audiovisual teaching machines and reading materials designed for use with such machines; and (c) an in-service training program for the staff. (See Page 14-17) The machine-adapted reading materials were the Basic Skill Centers Reading Program, developed in Minneapolis, and the Dorsett Reading Program. (See Page 4-9)

During 1973-74 the Reading Component served 950 students. Those 747 students with complete pretest, posttest, and attendance data constituted the evaluation group. The average complete-data student attended 87 ESAA class sessions, was absent for 16 sessions, and had an ESAA-class attendance rate of 85%. (See Page 9-14)

The Reading Component not only met, but surpassed, its objectives for comprehension gain among disabled readers. (See Page 3-4) Objective I stated, in part, that students with pretest comprehension grade-scores of 0-3.9 would show a median of 1.5 months comprehension gain for every month in the ESAA program; in fact, these students achieved a median gain rate of 2.4. Objective II stated, in part, that students entering the Component with pretest scores of 4.0-6.0 would have a median rate of 2.5 months gain per program month; the actual median rate for Objective II students was 3.1. Also, within each separate school, the ESAA students usually surpassed Objective I and II. (See Page 17-22) In every public school approximately 60% of the Objective I students exceeded the expected median gain-rate of 1.5. Factors possibly accounting for differences among schools in gain rates were discussed. (See Page 22-24)

Recommendations for program improvement included: (a) a complete set of machine-programmed materials available to each teacher; (b) a full-time person to service Dorsett machines and distribute machine-programmed materials; (c) use of a single reading test for all students, with different equivalent forms for pre- and posttest; (d) careful consideration of the fact that minority students were overrepresented in the ESAA reading programs of some schools. (See Page 25-27)

The evaluator recommended that continued funding be sought for the Reading Component. (See Page 27-28)

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The Reading Component of the Minneapolis Schools' 1973-74 Emergency School Aid Act Project: An Evaluation

The Reading Component of the Minneapolis Schools' 1973-74 Emergency School Aid Act Project was designed to improve reading comprehension among junior high students with extremely poor reading skills. The Reading Component included a staff of 14 teachers and 17 teacher aides, a curriculum consisting of teaching machines and programmed reading materials, and an in-service training program for the staff. A full-time Reading Coordinator, also funded by ESAA, served as a resource for schools participating in the Reading Component. During the 1973-74 school year the Reading Component provided remedial instruction for approximately 950 students in both public and nonpublic Minneapolis schools. This evaluation studies the reading progress and characteristics of those 747 ESAA reading students for whom both pretest and posttest reading comprehension scores were available.

Because the Emergency School Aid Act (1972; denoted hereafter as ESAA) was designed in part to help solve instructional problems that might arise from planned desegregation, the Reading Component operated in those eight public junior high schools[1] desegregating as of fall, 1973: Anthony, Bryant, Franklin, Jordan, Jefferson, Lincoln, Phillips, and Ramsey. (See the 1972 summary of the Minneapolis desegregation plan cited in References.) Junior high students in six nonpublic schools also participated in the Reading Component in 1973-74: the seventh and eighth grades in Ascension, Holy Rosary, Incarnation, St. Joan of Arc, and St. Stephens; and the ninth grade at Regina High.

Background: The Minneapolis Schools' ESAA Project

The Reading Component was one of three comprising the Minneapolis Schools' ESAA Project. The other Components provided remedial math instruction and Desegregation Counselor-Aides for junior high students. The Counselor Aides were employed to prevent or reduce any racial conflict that might arise in the desegregating public junior highs. The original plans for each of the

[1] At the beginning of the 1973-74 school year, the Reading Component also provided a teacher, aide, and instructional materials for North High ninth graders. In November, however, this teacher and aide were shifted to Ramsey Junior High, where their services seemed more essential. Most of the extremely poor readers at North had already been scheduled for other remedial instruction before the ESAA teacher arrived in the fall.

three Components are described in the proposal for Minneapolis' ESAA Project (Office of Planning, Development, and Federal Programs, 1973).

Among the three Components, the Reading program was considered first in priority for funding, ahead of Conflict Resolution (Counselor-Aides) and Math. The Reading Component was also the most expensive, costing $284,113 in the public junior highs and also taking the major share of the $50,791 allotted to nonpublic schools for reading and math instruction. Of the total $535,441 in ESAA funds awarded to Minneapolis for 1973-74, approximately 60% went to the Reading Component.

The priority of each Component for funding was determined by a vote of the ESAA Districtwide Advisory Committee, a group constituted in accordance with ESAA guidelines so as to (a) represent all major racial/ethnic groups in Minneapolis and (b) include teachers, students, parents, and members of community organizations promoting equality of opportunity.

ESAA evaluation. The ESAA-Project budget allotted a maximum of $10,000 for evaluation. These funds were used to study all three Components--Reading, Conflict Resolution, and Math. The evaluation was conducted by an independent contractor, a research psychologist selected by the Research and Evaluation Department of the Minneapolis Public Schools. Although the evaluator received technical consultation and clerical support from the Research and Evaluation Department, the evaluator was not a regular employee of the school district.

The relationship between ESAA and Title I assistance. Seven of the ESAA public schools--Bryant, Franklin, Jefferson, Jordan, Lincoln, Phillips, and North--also received federal aid in 1973-74 under provisions of Title I of the Elementary and Secondary Education Act. Title I funds are used to aid the compensatory education of disadvantaged students. ESAA funds, to aid desegregating school districts, are not necessarily earmarked for compensatory education, although they may be so used. In Minneapolis, the ESAA Project did, however, emphasize compensatory reading and math instruction. The ESAA students in these schools were a subset of Title I-eligible, disadvantaged students, consisting of the lowest achieving junior high age students; namely, the lowest achieving 125 students in reading, and the lowest achieving 125 students in math. In short, in a

school that received assistance from both ESAA and Title I, every ESAA student was a Title I-eligible student, but not every Title I student was an ESAA student.

The Organization of This Evaluation Report

The following sessions of this report provide answers to four questions about the Reading Component:

1. What were the objectives of the Component?

2. How did the Component operate? The answer to this question includes a description of the Reading Component's curriculum, students, staff, and day-to-day operation. The actual operation of the Component is also compared to the original Project proposal's prescriptions for program operation.

3. Was the Component effective in meeting the objectives stated in the original Project proposal? Included in the answer to this question is a discussion of factors possibly accounting for differences among schools in their success in meeting Component objectives.

4. What recommendations should be made concerning (a) the improvement of Component operation and (b) the re-funding of the ESAA Reading Component?

THE OBJECTIVES OF THE READING COMPONENT

The Reading Component was designed to improve reading comprehension among the poorest-reading students in each ESAA school. In each ESAA public junior high, the lowest-achieving 125 "readers" were the target of the Reading Component. In the nonpublic ESAA schools, smaller numbers of poor readers were selected for the program. Each student selected for the ESAA Reading Component was supposed to be two or more reading-comprehension years below actual grade placement, as of the start of the 1973-74 school year. Also, no student was to be above the 6.0 grade level in pretest reading comprehension.

The specific objectives of the Reading Component, according to the ESAA Project proposal, were:

Objective I: students entering the Reading Component with reading-comprehension grade-equivalent scores of 3.9 or less will show a median gain of 1.5 grade-equivalent-score months for every calendar month in the Program. Specifically, (a) 30% will gain at a rate of 2.5 or more grade-equivalent months per Program month; (b) 15% will gain at a rate of 1.7 to 2.4, inclusive; and (c) 30% will gain at a rate of 1.0 to 1.6. Students with comprehension levels of 0 to 3.9 were designated Objective I students.

Objective II: students entering the Reading Component with reading-comprehension grade-equivalent scores of 4.0 to 6.0 will show a median gain of 2.5 or more grade-equivalent-score months for each calendar month in the Program. Specifically, (a) 30% will gain at a rate of 4.0 grade-equivalent months per Program month; (b) 15% will gain at a rate of 2.7 to 3.9, inclusive; and (c) 30% will gain at a rate of 1.0 to 2.6. Students with reading comprehension levels of 4.0 or above, but at least two achievement-years below their actual grade placement, were designated Objective II students.

THE OPERATION OF THE READING COMPONENT

This discussion includes a description of the Reading Component's innovative instructional approaches; a description of the students and their method of selection for the Program; and a description of the Component's staffing and day-to-day administration within the schools. The role of the teacher aide is described within the third section on staffing and daily classroom operation.

The Reading Component's Innovative Instructional Approaches

Instruction in the Reading Component emphasized the use of innovative curriculum materials usable with the Dorsett M-86 A-V Teaching Machine. The Dorsett machine, resembling a small television set, contains a filmstrip projector and a record player. The Dorsett Company also added a cassette player to each machine, to accommodate lessons from the Basic Skills Centers Reading Program (see p. 5).

Each lesson for an audiovisual teaching machine such as the Dorsett consists of both a filmstrip and a synchronized soundtrack. For each frame of the filmstrip there is a soundtrack-presented comment or question. If a question is asked, the student responds by pressing one of three buttons (some machines have five buttons). A correct choice is followed by a soundtrack presentation of "Yes," "Right," "Correct," or the equivalent, and the filmstrip automatically advances. On the Dorsett machine, an incorrect choice is followed by a 1-second "error tone," and the correct button must then be pressed for the lesson to continue. At the conclusion of the audiovisual presentation, the student may complete a brief paper-and-pencil mastery test. Each lesson used in the Reading Component generally took 15-20 minutes; most students could easily complete two lessons during a class period.

The above comments on the design and use of the materials generally apply,

with some exceptions, to both sets of curriculum materials used in the Reading Component. These curricula were:

1. The Basic Skills Centers Reading Program[2], developed by Minneapolis Schools staff, was first used in the Basic Skills Centers of the Minneapolis Public Schools (see Clark, 1972, 1973). The original ESAA proposal (pp. 17-18) specified the Basic Skills Program as the primary curriculum for Objective I readers (0-3.9 grade-equivalent level in comprehension). Each lesson in the Basic Skills curriculum focuses on a particular "molecular" reading skill, or several related skills. With nonreaders, the lessons are used in an invariant sequence to develop systematically the primary "phonetic" decoding skills of word analysis. Individual lessons in the Basic Skills curriculum can also be used in remedial work with readers having specific weaknesses. The soundtrack for each Basic Skills lesson was provided by a cassette tape synchronized with the accompanying filmstrip. For practical reasons, the Basic Skills lessons were used with Dorsett machines, although they can be used with other teaching machines.

2. The Dorsett Reading Program (Dorsett Educational Systems, Inc., undated) was the curriculum originally designed for use with the Dorsett machines. According to the original design for the Reading Component (p. 18 of Project proposal), the Dorsett Reading Program would be the primary curriculum for Objective II readers (4.0 to 6.0 in reading comprehension, but at least two achievement-years below their actual grade placement). The Basic Skills curriculum discussed above was to be used as a supplement, to remediate specific weaknesses among Objective II readers. The Dorsett Program, more than the Basic Skills Program, emphasizes story reading in the development of reading skills. Each Dorsett story is graded according to the comprehension level it requires. A number of different skills may be combined in the same high-interest Dorsett story. In the Basic Skills Program, however, each lesson stresses one specific skill.

Unforeseen combining of Basic Skills and Dorsett reading lessons. The original ESAA proposal specified the Basic Skills Program for Objective I students and the Dorsett Reading Program for Objective II students. In practice, however, most students used both Dorsett and Basic Skills lessons, regardless of their pretest reading level. In addition students used a

[2]For further current information about the Basic Skills Program, contact Mary C. Kasbohm, Minneapolis Public Schools.

variety of other reading materials, not programmed for the Dorsett machine.

The authors of the Basic Skills materials supported the Project proposal's implied separation of Basic Skills from Dorsett materials. Specifically, these authors advocated exclusive use of their curriculum for instructing Objective I students in the primary decoding skills. The Dorsett materials, these authors felt, introduced words and letter combinations in a relatively unsystematic manner that might confuse some unskilled readers. Thus the Basic Skills authors recommended that Dorsett lessons be postponed until Objective I students had made substantial progress on the Basic Skills materials (completion of lessons below Level 204 at least).

Once students had graduated to Objective II status (at least 4.0 in comprehension) and had presumably mastered most primary decoding skills, the Basic Skills authors would allow the use of both (a) the commercial Dorsett curriculum, to further develop comprehension, and (b) the Basic Skills curriculum, to remedy specific decoding weaknesses.

Table 1 shows the reading materials actually used by 308 Objective I and 355 Objective II students. These students are a subset of the 747 students with complete test and attendance data (see later tables, such as Table 3). Information on materials used was not recorded for 13 Objective I students and 71 Objective II students with otherwise complete data. Table 1 suggests considerable mixing of Dorsett and Basic Skills materials. According to this table, 85% of the Objective I students used commercial Dorsett reading lessons during at least five different class sessions. The evaluator's observations suggest that most Objective I students used commercial Dorsett lessons throughout their period of ESAA instruction, and therefore long before they reached the 4.0 comprehension level.

ESAA teachers did not believe the Dorsett lessons should be kept from Objective I students. Appendix A is the questionnaire answered by all ESAA reading teachers. The results, recorded on this sample questionnaire, show 12 of 14 teachers answering "No" to the question, "Do you think 'commercial Dorsett' lessons should be used only with Objective II students...?" In their written comments to this question, eight teachers said that Dorsett lessons provided needed "variety," "interest," or "change of pace" for Objective I students.

Other reading materials. Most ESAA students were easily able to complete two machine-programmed lessons (either Basic Skills or Dorsett) per class period. The ESAA reading teachers had the practical problem of finding supplementary activities for the remaining class time. All but one of the ESAA teachers

Table 1

Reading Materials Used by ESAA Students

Reading material[a]	% of students who used this material during at least 5 class sessions																	
	Total group of students		Public junior highs														G nonpublic schools	
			School A		School B		School C		School D		School E		School F		School G			
	Obj. I N=308	Obj. II N=355	Obj. I N=26	Obj. II N=46	Obj. I N=65	Obj. II N=37	Obj. I N=36	Obj. II N=17	Obj. I N=15	Obj. II N=99	Obj. I N=32	Obj. II N=47	Obj. I N=49	Obj. II N=54	Obj. I N=54	Obj. II N=59	Obj. I N=35	Obj. II N=63
Minneapolis Basic Skills Reading Program (and Dorsett machine)	99	91	100	—[b]	87	22	100	76	100	100	97	—[b]	100	100	100	90	100	84
"Commercial Dorsett" Reading Program (and Dorsett machine)	85	99	100	100	37	92	100	100	100	100	97	98	100	98	57	95	97	100
Other commercially prepared reading lessons, readers, or worksheets	51	57	0	0	75	68	100	100	100	100	0	2	24	18	9	25	97	86
Teacher-prepared reading lessons, readers, or worksheets	74	78	0	0	100	100	100	100	100	100	100	100	0	0	91	90	69	69
Library books (not designed to teach reading and having no reading-related questions)	54	64	0	0	96	97	100	100	100	100	0	0	0	0	70	80	74	84
Non-library books, such as paperbacks (not designed to teach reading and having no reading-related questions)	78	78	0	0	100	100	100	100	100	100	0	0	100	94	81	80	69	78
Other materials	89	87	0	0	96	92	100	100	0	0	97	100	100	96	94	86	38	66

Note.--"Obj. I" denotes Objective I students, those with pretest reading comprehension scores of 3.9 or below. "Obj. II" denotes Objective II students, those with pretest comprehension of 4.0 or above.

The N's and percents in this table are based on students for whom information on materials used was available. These students are a subset of students with complete test and attendance data (see Table 3).

[a]Descriptions and examples of the materials categories are in the text.

[b]Data not available.

therefore supplemented machine-programmed lessons with a variety of other materials, categorized in Table 1:

1. Other commercially prepared reading lessons, readers, or worksheets, such as those included in the Job Corps Reading Program (1972), were used by 51% of the Objective I students and 57% of the Objective II students. The Language Master machine, part of the Job Corps Program, was used by a few of these students.

2. Teacher-prepared reading lessons, readers, or worksheets were used by approximately three-fourths of the students. The most frequent teacher-prepared lesson was some type of vocabulary exercise, including crossword puzzles and word recognition worksheets.

3. Library books and paperbacks (not designed to teach reading and having no reading-related questions) were used in all but two or three schools. Recent book offerings by commercial publishers include high interest biographies with accompanying cassette narrations; ESAA teachers used one such series on a trial basis. Table 1 shows that at least 80% of the students read free-choice books of some type during five or more ESAA class sessions.

4. Other materials used by ESAA students included magazines (including reading magazines such as Scholastic Scope), word games (e.g., Scrabble, Password), comics, newspapers, and retail catalogs. Approximately 90% of the students used such materials during five or more class sessions.

Multi-ethnic materials. Since the total ESAA Project was designed to help solve any problems associated with Minneapolis' school-desegregation, ESAA teachers were asked whether they had used "multi-ethnic" reading materials, "designed to promote understanding of, and respect for, different racial and ethnic groups" (See Appendix A questionnaire). Seven of the 14 teachers indicated they had used such materials. Included among these materials were filmstrips and worksheets on American Indian leaders; readings and workbooks on Black history; cassettes and stories on minority athletes and women leaders; and Chicano-American poems. No teacher listed either the Basic Skills or Dorsett reading programs as an example of multi-ethnic materials, although these core curricula of the ESAA Reading Component do depict minority persons in a variety of life situations.

The ESAA Reading Students: Their Selection and Characteristics

A preliminary needs assessment based on the 1972 city-wide testing (see ESAA Project proposal) showed that each desegregating public junior high could expect to have at least 125 students two or more years below grade level in comprehension as of fall, 1973; on the average, each school could expect more than twice that number. In the nonpublic ESAA schools, projections of students two or more years below grade in reading as of fall, 1973, ranged from 12 to 51 per school, with a median of 17. In the public junior highs, therefore, the 125 poorest readers in each school were the target for the Reading Component. In the nonpublic schools, the numbers of ESAA reading students would be much smaller. In all cases, ESAA students were to be selected from those two or more years below grade level in comprehension (and also at or below the 6.0 level).

Selection of Students. Students entering ESAA reading classes in fall, 1973, were tentatively designated Objective I or Objective II students by the teacher, on the basis of previous test scores and placement recommendations. The students then took the comprehension portion of an appropriate-level Gates-MacGinitie Reading Test. This comprehension score was used as (a) a check of the student's appropriate designation as an Objective I or Objective II student; and (b) a pretest for the ESAA-Project evaluation.

Different Gates-MacGinitie levels were used to test the comprehension of Objective I and Objective II readers:

1. All junior high students believed to be Objective I readers (0-3.9 grade-equivalent level) received the Gates-MacGinitie Primary C, Form 2 (hand-scored) Comprehension Test. The Primary C was originally designed for use with third graders.

2. All students believed to be Objective II readers (4.0-6.0, yet at least two years below grade level in comprehension) received the Survey D, Form 2, Comprehension Test. The Survey D was originally designed for use with grades 4 through 6. Objective II seventh graders (in the 4.0-5.0 comprehension range) took the machine-scored version of this test in September, 1973, as part of city-wide testing. The eighth and ninth grade Objective II students took the hand-scored version of D (answers were written on the booklet instead of a machine-scorable answer sheet).

If the Gates-MacGinitie comprehension score showed a student to be disabled in reading but inappropriately designated as Objective I or Objective II, then the student was to take the prescribed test (C for Objective I students, D for Objective II) to confirm the correct re-designation. A number of students, however, particularly Objective I students, were not tested according to the above plan. Objective I students were to take Primary C for both pretest and posttest, but approximately one-half took Survey D as both pretest and posttest. Most Objective II students correctly took Survey D, but approximately one-sixth took Primary C on both testing occasions. (Only one student took a pretest and posttest of different levels; i.e., a C pretest and D posttest.)

The appropriateness of the tests selected for the ESAA evaluation. Contrary to the original testing plan, half of the Objective I students took Survey D as both pretest and posttest. In fact, for many Objective I students, the D test was probably more appropriate than the C as an instrument to measure comprehension gain. An Objective I student near the 3.9 level on the C had little room to gain, since the C grade-equivalents only go to 7.0 (for students with near perfect answering). The D test ranges from 2.2 to 11.9, giving it a range nearly twice that of the C. In short, to the extent that students near or above the 4.0 grade level were tested with the third-grade C, the low ceiling of the C probably led to underestimation of actual reading gain. (Fortunately, only one-sixth of Objective II students took the C as pre- and posttest.)

Pretest comprehension. Table 2 shows the pretest and posttest comprehension test scores of ESAA students. Included in Table 2 are the scores of those 747 students having complete test and attendance data: pretest score, posttest score, and number of days enrolled. The mean pretest comprehension for the 321 Objective I students was 2.9 (standard deviation=.8). The mean for the 426 Objective II students was 5.1 s.d.=.8).

The mean initial reading ability of Objective II students varied somewhat from school to school; the mean initial reading ability of Objective I students was similar across schools. The range of school means on the pretest was therefore smaller for Objective I students (difference of .4 from highest school mean to lowest) than for Objective II students (range of 1.0). In schools with a seventh grade, the poorest (Objective I) readers tended strongly to be seventh graders (grade level correlated .41 with pretest score). Objective II students tended to be eighth and ninth graders.

Table 2

Pretest and Posttest Reading Comprehension Test Scores of ESAA Students

School	Objective I students (Pretest comprehension of 3.9 or less)						Objective II students (Pretest comprehension of 4.0 or more)					
	Pretest			Posttest			Pretest			Posttest		
	N	Mean	Standard deviation	N	Mean	Standard deviation	N	Mean	Standard deviation	N	Mean	Standard deviation
A	29	3.1	0.8	29	4.8	0.9	46	4.8	0.6	46	6.0	1.0
B	67	2.8	0.7	67	4.2	1.3	37	4.7	0.7	37	6.2	1.1
C	36	3.0	0.6	36	4.4	1.3	17	4.6	0.5	17	5.6	1.0
D	15	2.8	0.7	15	5.3	1.5	101	5.6	0.9	101	7.3	1.7
E	36	3.1	0.5	36	5.1	2.0	49	4.9	0.5	49	7.0	2.0
F	49	2.8	0.9	49	4.4	1.4	54	4.6	0.5	54	6.7	1.6
G	54	2.7	0.8	54	4.5	1.7	59	5.0	0.6	59	7.2	1.4
6 nonpublic schools	35	3.1	0.6	35	4.6	1.7	63	5.3	0.9	63	7.2	1.8
Total group	321	2.9	0.8	321	4.6	1.5	426	5.1	0.8	426	6.9	1.7

Note.--Reading comprehension is defined as grade score on a Gates-MacGinitie Reading Comprehension Test: Primary C, Form 2; Survey D, Form 2; or Survey D, Form 2M. Objective I students were to take Primary C for both pretest and posttest, but approximately one-half took a Survey D as both a pretest and posttest. Objective II students were to take a Survey D for both pretest and posttest, but approximately one-sixth took Primary C as both a pretest and posttest.

Reading Component guidelines specified, in part, that ESAA students would be selected from those below 6.0 in pretest comprehension. In fact, 7% of the ESAA students were above 6.0 on the pretest. The highest pretest comprehension score was 8.1.

Number of students served by the ESAA Program. Table 3 indicates that approximately 950 students were served by the ESAA Reading Component. The entries in Table 3 are based only on those 747 students having complete test and attendance data. Approximately 100 students participated in the program in 1973-74 but (a) did not take the pretest, (b) did not take the posttest, and/or (c) did not have available information on number of days enrolled. An estimated additional 100 students participated in ESAA reading classes at Lincoln Junior High School, but the teacher neglected to make available the test and attendance data from these students, despite repeated requests by the evaluator.

In the public junior highs, the mean number of students served was slightly over 100 per school. As noted above, the Component had planned to serve approximately 125 students per school in 1973-74. In the nonpublic schools the mean number of students served was between 15 and 20 per school; only one nonpublic school had fewer than 10 students.

Attendance. The attendance rate of ESAA students--while not as high as the 90% rate for all Minneapolis students in grades seven through nine in 1973-74[2]--seemed good for a group of potential dropouts. Table 3 indicates that Objective I students, on the average, attended 94 ESAA classes in 1973-74 and were absent 18 times. Objective II students attended an average of 81 ESAA classes and missed 14 classes during their period of participation in the Reading Component. The somewhat longer period of enrollment for Objective I students than Objective II students is attributable in part to the fact that Objective II students were more likely than Objective I students to complete the most advanced reading materials, then transferring to another class for the rest of the school year.

The attendance rate during ESAA-class enrollment was 84% for Objective I students and 86% for Objective II students. The poorest attendance rate, 74%, occurred among a group of ESAA students which had a higher proportion of American Indians, 42%, than the ESAA group of any other school.

[2]Office of the Chief School Statistician, personal communication, August 9, 1974.

TABLE 3

Selected Characteristics of ESAA Reading Students

School	Student characteristic									Attendance							
										Objective I students (Pretest comprehension ≤ 3.9)				Objective II students (Pretest comprehension ≥ 4.0)			
	Students with complete test and attendance data[a]	Grade placement during 1973-74			Sex		Race or ethnic group[b]										
		7th	8th	9th	Male	Female	White American	Black American	Indian American	N	Days present Mean	Days absent Mean	% attendance Mean	N	Days present Mean	Days absent Mean	% attendance Mean
	N	%	%	%	%	%	%	%	%								
A	75	55%	45%	0%	49%	51%	41%	52%	3%	29	113	20	85	46	92	17	86
B	104	54	35	11	66	34	60	27	13	67	95	14	85	37	62	12	85
C	53	51	40	9	68	32	51	8	42	36	81	26	76	17	66	30	69
D	116	0	17	83	56	44	42	50	1	15	94	14	88	101	95	20	83
E	85	85	15	0	66	34	63	35	0	36	99	8	91	49	64	3	96
F	103	75	25	0	57	43	63	26	8	49	82	24	77	54	71	13	86
G	113	30	48	21	63	37	78	18	2	54	86	15	86	59	62	10	87
5 Nonpublic schools	98	48	29	23	42	58	66	18	13	35	115	17	87	63	99	12	87
Total group	747	46%	33%	20%	57%	43%	59%	30%	8%	321	94[c]	18[d]	84[e]	426	81[f]	14[g]	86[h]

[a] Approximately 100 additional students participated in the Reading Component in 1973-74, but (a) did not take the pretest, (b) did not take the posttest, and/or (c) did not have attendance records available. These students, along with all the Lincoln Junior High ESAA students (for whom all data were not reported), were not included in this evaluation.

[b] An additional 10 students were Spanish-surnamed, 4 were Asian American, and 7 were designated "Other" race or ethnic group.

[c] Standard deviation (S.D.) = 38 days.

[d] S.D. = 16 days

[e] S.D. = 14%

[f] S.D. = 39 days

[g] S.D. = 15 days

[h] S.D. = 13%

Other student characteristics. In most schools, and for the ESAA students as a total group, boys outnumbered girls (57% vs. 43% for the total group). When Objective I and II students were combined, nearly one-half were seventh graders, one-third were eighth graders, and one-fifth were ninth graders. Table 3 also shows that for the total student group, 59% were White American, 30% were Black American, and 8% were Indian American. Spanish-surnamed students, Asian American students, and students identified with other racial/ethnic categories together constituted only 3% of the ESAA group. The Minneapolis Public Schools' 1973-74 sight count indicates that for grades 7-9 in the city as a whole, 83% of the students were White, 12% were Black, 4% were Indian, 1% were Spanish-surnamed, and 1% represented other racial categories.

In every ESAA public junior high, the percentage of minority students was higher for the ESAA reading program than for the total student body. The percentages of minority students in each ESAA junior high ranged from less than 10% to 40%. The ESAA programs in three of these schools (A, C, and D) had 50-55% minority students, however. In School D, 50% of the ESAA students represented racial/ethnic minorities, while only 25% of the student body represented minorities.

The Staffing and Daily Operation of the Reading Component

Staffing. Each of the eight desegregating junior highs received at least one full-time reading teacher and one teacher aide. Ramsey Junior High received two full-time reading teachers (see Footnote 1, p. 1). Three schools--Anthony, Jefferson, and Franklin--received two teacher aides, while Ramsey had three aides. Anthony, Jefferson, and Ramsey were not eligible for other federal assistance to disadvantaged students (e.g., under Title I of the Elementary and Secondary Education Act), and therefore an extra aide seemed necessary.

The small number of ESAA-eligible students in participating nonpublic schools led the ESAA Project developers to allocate staff part-time, based on the number of extremely poor readers in each school. Accordingly, the equivalent of two full-time teachers and one half-time teacher-aide was distributed among the six ESAA nonpublic schools.

In short, the ESAA Reading Component employed 14 teachers and 17 teacher aides. The Component had funding for the salary-equivalent of 11 full-time (seven hours per day) teacher-aide positions. Some of the aides and all five of the nonpublic teachers thus worked part-time.

Most of the staff persons employed in the ESAA Reading Component were women (10 of 14 teachers; 15 of 17 aides). All four minority persons working in the ESAA schools (two teachers and two aides) were Black Americans.

Daily Operation. In each ESAA school, one classroom was designated as an ESAA "compensatory reading classroom." Each ESAA classroom was equipped with Dorsett machines (approximately 15 in each public junior high; fewer in the nonpublic schools). In the public junior highs, each of these classrooms was staffed by the ESAA reading teacher, the ESAA reading aide(s), and, in some schools, another reading aide funded under Title I of the Elementary and Secondary Education Act.

In the original design, six ESAA reading classes, with approximately 20 students per class, were to be held daily in each ESAA public-junior-high reading classroom. This original six-class schedule could not be implemented, however. Under their city-wide contract, Minneapolis teachers are required to teach only five classes per day. All public-school ESAA teachers taught five ESAA reading classes per day, with the exception of two teachers who each taught four ESAA classes and one non-ESAA reading class per day.

While participating in the Reading Component, each student was scheduled into ESAA class for one period per day. For many ESAA students, the ESAA reading class substituted for either English or Social Studies; for other students, the ESAA class replaced a study period. Many students had already been scheduled into English or reading classes when the ESAA program started in late September. To constitute ESAA reading classes, students often had to be transferred from already established classes. Three ESAA teachers had early difficulty obtaining these transfers from ESAA-eligible students.

The enacted role of the teacher aides in the ESAA reading program. The role of the reading aide was only roughly outlined in the Project proposal. Since $65,169 had been allotted for public-school reading aides, it seemed important to describe both the work of these aides and their reactions to the first year of the Reading Component. Appendix B is a questionnaire completed by all 17 of the reading aides. Responses have been tabulated on this sample questionnaire.

Appendix B shows that the average aide assisted slightly over five ESAA classes per day. A few part-time ESAA aides assisted non-ESAA classes, and some aides in nonpublic schools assisted both ESAA reading and ESAA math classes.

For each of 10 role-related activities, aides were asked (a) whether they performed the activity; (b) how they performed the activity (including any "tips" they would suggest to other aides seeking improved reading performance by ESAA students); and (c) the percent of total time they spent on the activity. The following picture of the aide's role emerged.

Approximately one-third of the aides' time was spent interacting directly with students. The aides' single most time-consuming activity was "helping students to do their work," which occupied one of every five classroom hours, on the average. This activity frequently included explaining worksheets, reading directions, and drilling students on vocabulary words. A closely related activity was "giving feedback to students regarding their classroom performance (for example, praising, warning, telling students about their progress)." The comments of several aides stressed the importance of being sensitive to students' needs for understanding, support, and encouragement. "Our students require tremendous quantities of praise and support," said one aide. "Every day some student is particularly upset--remedial students need comfort," observed another aide.

Various clerical tasks, including record-keeping, occupied approximately half of the aides' time. These activities included (a) scoring tests, end-of-lesson mastery quizzes, and other written materials (15%), (b) maintaining up-to-date student records (10%); (c) organizing and storing the reading materials (8%); (d) passing out and monitoring tests and end-of-lesson mastery quizzes (7%); (e) passing out and collecting reading materials (5%); (f) typing and duplicating worksheets and other reading materials; and taping narrations to accompany written stories and books.

Other activities included assisting the teacher in lesson planning (8%), assisting the teacher in finding reading materials to supplement the Basic Skills and Dorsett lessons (5%), making minor repairs on Dorsett machines, and obtaining student records and grades from counselors.

The reading aides did not generally report any role conflict between themselves and teachers. When asked, "Do you now perform any duties that you feel you should not perform?," 14 of 17 aides answered "No." When asked, "Are there duties you <u>don't</u> perform that you feel you <u>should be</u> performing as an ESAA Reading Aide?," 15 of 17 aides again answered, "No." Two aides felt that their ESAA teacher had given them too much responsibility for classroom operation (e.g., "I am teaching too much--the teacher does nothing").

Student involvement in classroom operation. Several aides believe that efficiency and motivation in the ESAA classroom can be increased by involving students in the operation of the program. In some ESAA schools students pass out and collect materials, select their own Basic Skills and Dorsett programs, and keep records of their own progress.

The Dorsett machine: some mechanical problems. Several teachers and several aides experienced mechanical problems with the Dorsett machine. Some, but not all, of these problems, were the result of student vandalism. The moving parts of the machine are accessible to the student: records can be scratched, needles can be broken. When students were learning to use the machines at the beginning of the year, nearly every ESAA classroom had at least one broken machine. At present there is one Minneapolis school employee assigned part-time to the maintenance of the 139 Dorsett machines used in the Reading Component. These machines represent an investment by the Minneapolis Public Schools of nearly $50,000.

THE EFFECTIVENESS OF THE READING COMPONENT IN MEETING ITS OBJECTIVES

Did the ESAA students make those gains in reading comprehension described earlier as Reading Component Objectives I and II? Objective I stated, in part, that students entering the program at the 0-3.9 comprehension level would show a median gain of 1.5 grade-equivalent months for every chronological month in the program. Objective II stated, in part, that students entering at the 4.0-6.0 level would gain at a rate of 2.5 grade-equivalent months per program month.

Before answering this question, one must define rate of comprehension gain more precisely. Then, after the main results of this evaluation are presented, some factors possibly accounting for differences among schools in their gain rates will be discussed.

Defining the Rate of Comprehension Gain

The objectives of the Reading Component are defined in terms of months of reading comprehension gain for each month in the ESAA program. For each of the 747 ESAA students who took both a pretest and, on leaving the program, a posttest, gain was measured by first subtracting the pretest grade-equivalent score from the posttest grade-equivalent score. This gain score, expressed in years gain, was multiplied by 10 to obtain months gain. (The reading test norms assume 10 months in a school year.) "Months in the program" was defined for each student as the number of enrolled days (including absences) between the pretest and the posttest, divided by 18, the number of days in a school

month. (The Minneapolis school year has 180 days.)

For each public junior high (except Lincoln, whose data were missing) mean rates of comprehension gain were obtained separately for all Objective I students and all Objective II students. Data from the six nonpublic schools were pooled and two means were calculated: one for all nonpublic Objective I students, and the other for all nonpublic Objective II students.

In the original Project proposal, the reading gain results were to be based on (a) only those Objective I students who enrolled in the ESAA reading class for the entire school year and attended 105 days; and (b) only those Objective II students attending at least 40 school days in 1973-74. (Other students could be included in the evaluation if they passed sufficient mastery tests from the Basic Skills or Dorsett curriculum.) This restriction on eligibility for the evaluation seemed arbitrary to the evaluator. Accordingly, the following results are based on all students with complete test and attendance data.

The effect the approximately 200 missing-data students would have had on the results is unknown, but believed by the evaluator to be small. Except for the 100 or so Lincoln students, many of the missing-data students presumably were minimally involved in the ESAA Reading Component and made minimal gains. Since lack of a pre- or posttest implies a short enrollment period, however, the gain rates of these students may have been indistinguishable from the evaluation group. The evaluator suggests that inclusion of the missing-data students would have slightly and unimportantly lowered the obtained overall gain rates.

The Attainment of Reading Objectives I and II

The Reading Component not only met, but surpassed, its goals for comprehension-gain among disabled readers. Table 4 shows that Objective I students made a median gain of 2.4 months of comprehension gain for each month in the program; Objective I specified a rate of 1.5 months gain for each program month. Table 5 shows that Objective II students made a median gain of 3.1 months for each program month; Objective II specified a rate of 2.5 months gain per program month.

The objectives of the Reading Component also specified categories of comprehension-gain rate that would be attained by different proportions of ESAA students. Objective I had specified that 30% of its students would fall into the highest category, 2.5 or more months gain per program month. In

TABLE 4

Attainment of Objective I by ESAA Students
with Pretest Reading Comprehension of 3.9 or Less N=321

Statement of Objective I		Attainment of Objective I: Actual % of students making each level of gain								
Rate of reading comprehension gain	Expected % of students making this gain	Total group of students (N=321)	Public junior highs							6 Nonpublic schools (N=35)
			School A (N=29)	School B (N=67)	School C (N=36)	School D (N=15)	School E (N=36)	School F (N=49)	School G (N=54)	
2.5 or more months gain for each month in the program	30	47	38	41[a]	42	60	58	51	57	26
1.7 to 2.4 months gain for each month in the program	15	20	41	17[a]	19	13	14	16	19	20
1.0 to 1.6 months gain for each month in the program	30	16	14	9[a]	17	20	6	29	9	29
Less than 1.0 months gain for each month in the program (not part of stated objective)	25	17	7	33[a]	22	7	22	4	15	26
Descriptive statistics										
Median rate of comprehension gain (expected rate is 1.5 months gain for each month in the program)		2.4	2.1	2.1[a]	1.9	3.4	2.9	2.5	2.8	1.5
Mean rate of comprehension gain		3.4	2.4	2.9[a]	2.6	5.1	4.2	4.0	4.4	2.3
Standard deviation of comprehension-gain rate		4.2	1.3	4.1[a]	2.7	4.5	4.9	4.3	5.0	2.9

Note.--Reading comprehension is defined as grade score on a Gates-MacGinitie Reading Comprehension Test: Primary C, Form 2; Survey D, Form 2; or Survey D, Form 2M. Objective I students were to take Primary C for both pretest and posttest, but approximately one-half took a Survey D as both a pretest and posttest. "Months in the program" is defined as the number of enrolled days (including absences) between the pretest and the posttest, divided by 18 (the number of days in a school month).

[a]These entries had to be based on an estimate for each student of "months in the program." This estimate was the number of months during which the student attended half or more of the class sessions held. For Objective I students in other schools, comprehension-gain rates based on this attendance estimate were an average of .4 higher than rates using actual months in the program. The entries for School E, therefore, have been adjusted so as not to overestimate comprehension-gain rate.

TABLE 5

Attainment of Objective II by ESAA Students
with Pretest Reading Comprehension of 4.0 or more (N=426)

Statement of Objective II		Attainment of Objective II: Actual % of students making each level of gain								
Rate of reading comprehension gain	Expected % of students making this gain	Total group of students (N=426)	Public junior highs							6 Nonpublic schools (N=63)
			School A (N=46)	School B (N=37)	School C (N=17)	School D (N=101)	School E (N=49)	School F (N=54)	School G (N=59)	
4.0 or more months gain for each month in the program	30	39	11	42[a]	18	31	51	54	59	38
2.7 to 3.9 months gain for each month in the program	15	19	22	27[a]	6	23	14	17	22	16
1.0 to 2.6 months gain for each month in the program	30	27	50	21[a]	53	24	16	28	15	30
Less than 1.0 months gain for each month in the program (not part of stated objective)	25	14	17	11[a]	24	23	18	2	.3	16
Descriptive statistics										
Median rate of comprehension gain (expected rate is 2.5 months gain for each month in the program)		3.1	1.9	3.1[a]	1.8	2.8	4.5	4.2	4.5	2.8
Mean rate of comprehension gain		4.7	2.2	4.5[a]	2.1	3.5	6.8	6.1	7.2	4.0
Standard deviation of comprehension-gain rate		5.4	1.8	4.9[a]	2.6	3.9	7.5	6.0	6.7	4.9

Note.--Reading comprehension is defined as grade score on a Gates-MacGinitie Reading Comprehension Test: Primary C, Form 2; Survey D, Form 2; or Survey D, Form 2M. Objective II students were to take a Survey D for both pretest and posttest, but approximately one-sixth took Primary C as both a pretest and posttest. "Months in the program" is defined as the number of enrolled days (including absences) between the pretest and the posttest, divided by 18 (the number of days in a school month).

[a]These entries had to be based on an estimate for each student of "months in the program." This estimate was the number of months during which the student attended half or more of the class sessions held. For Objective II students in other schools, comprehension-gain rates based on this attendance estimate were an average of .5 higher than rates using actual months in the program. The entries for School B, therefore, have been adjusted so as not to overestimate comprehension-gain rate.

fact, nearly half of the Objective I students gained at this 2.5 rate. Objective II had specified that 30% of its students would make 4.0 or more months gain for each month in the program. The obtained distribution of Objective II gain rates showed 39% of the students in this highest category.

The lowest category of gain rate--less than one month gain per program month--had fewer than expected students. While 25% of both Objective I and Objective II students were expected to lose ground relative to their peers, only 17% of Objective I students and 14% of Objective II students actually had gain rates less than 1.0.

The obtained reading gain results are, of course, specific to a particular age group and testing procedure; these results are not reliably generalizable to other age groups or testing procedures.

Furthermore, the obtained gains cannot reliably be attributed to one or another single curriculum. The two curricula, Basic Skills and Dorsett, were so intermixed that their separate effects could not be determined.

Some anomalies in the reading comprehension gain results. Difficult to explain are two results that emerged from the reading gain data. First, a number of students made reading gains so high as to be almost implausible. For example, 19% of the Objective II students and 13% of the Objective I students made three or more years raw gain between the pretest and posttest. Such large amounts of raw gain, of course, led to extremely high gain rates; e.g. 19% of the Objective II students and 12% of the Objective I students made seven or more months gain for every month in the program. A few Objective I students and a few Objective II students had gain rates approximating 25 months gain per program month. These extremely high-gaining students caused the mean rates of comprehension gain to be higher than the median rates, for both Objective I and Objective II students. (The distributions of gain rates were positively skewed.) For Objective I students the mean rate of 3.4 months gain per program month was a full month higher than the median rate. For Objective II students, the mean rate of 4.7 was one-and-one-half months higher than the median.

Second, there was not a close relationship between number of days present and pretest-to-posttest gain. In fact, for all students in the ESAA Reading Component (Objective I and II students combined) the correlation between number of days present and reading gain was nearly zero ($r = .01$).

Perhaps a number of factors worked together to produce these strange results. For example, the lack of correlation between days present and gain may be explained if attendance in ESAA Reading class leads to steady gain up

to a certain threshhold of days present, after which further attendance produces diminishing returns. In support of this notion of an optimal duration for ESAA-program instruction is the fact that relatively high comprehension-gain rates tended to be accompanied by relatively low numbers of days present (r= -.43). Another explanation for the anomalous gain results is that students, usually taking the same test form twice, remembered the comprehension passages from pretest to posttest. Any remembering of items would improve the posttest scores, since students could concentrate on those more difficult items they missed on the pretest.

Further study of these gain anomalies seems important. First, to assess the importance of remembering items from pretest to posttest, the gains of students taking the same form of a test twice should be compared with the gains of students taking different forms for pretest and posttest. Second, the reading-comprehension level of these extremely high-gain students should be followed up. For example, 65% of the Objective II students and 11% of the Objective I students had posttest comprehension levels greater than 6.0. If the gains of these students are stable and valid, then these students should not be future participants in compensatory reading programs like ESAA's, designed for students at or below the 6.0 level.

Differences Among Schools in Their Gain Rates

As discussed above, Objective I students and Objective II students, as total groups, surpassed their respective reading-gain objectives. In addition, the ESAA students within each separate school usually surpassed Objectives I and II. Tables 4 and 5 (pp. 19-20) show that in each public school, the Objective I students exceeded their goal of a median 1.5 months gain per program month. Five of seven public schools exceeded the median rate specified in Objective II; only Schools A and C had median rates less than 2.5 (yet close to two months gain per program month). The nonpublic schools, taken together, just met Objective I and slightly surpassed Objective II.

The ESAA schools varied considerably in their comprehension-gain rates. For Objective I students, the school median rates ranged from 1.5 (for the pooled nonpublic students) to 3.4 (for School D). For Objective II students, the highest school median of 4.5 (Schools E and G) was two-and-one-half times that of the lowest median (1.8 for School C).

Three of the ESAA public schools--E, F, and G--had relatively high gain rates for both their Objective I and their Objective II students. Not only were the means and medians high, but also over 50% of the Objective I students

and 50% of the Objective II students attained the highest category of gain rate specified in the program objectives; namely, 2.5 or more for Objective I students and 4.0 or more for Objective II students.

Two other public schools--A and C--and the pooled nonpublic schools, occupied positions among the lower four ranks for both their Objective I-student medians and their Objective II-student medians.

In the discussion below, Schools E, F, and G will be called "higher-gain schools," and Schools A and C will be referred to as "lower-gain schools."

The Relation of Two Instructional Factors to Gain-Rate Differences Among Schools

Two factors that might have accounted for gain-rate differences between the three "higher-gain schools" and the two "lower-gain schools" were:

1. Separation of Basic Skills from Dorsett lessons. In view of the recommended exclusive use of the Basic Skills curriculum by beginning Objective I students (see pp. 5-6), some might have predicted that the degree of separation of Basic Skills lessons from "commercial Dorsett" lessons would be a factor in gain-rate differences. This hypothesis could not be tested, however, since in nearly every school the great majority of Objective I students used both Basic Skills and Dorsett lessons throughout their period of participation in the ESAA Reading Component. One can infer only that exclusive use of the Basic Skills curriculum is not a necessary condition for the attainment of Objective I, since 60% of the Objective I median gain rate of 1.5. Among Schools A, C, E, F, and G, the evaluator's observations suggest that Schools A, C, and F emphasized Basic Skills lessons with Objective I students more than Schools E and G. Thus, the higher-gain and lower-gain schools did not clearly differ in separation of Basic Skills and Dorsett lessons.

2. The use of supplementary materials. One factor plausibly accounting for some of the observed gain-rate differences was the use of supplementary reading materials other than Basic Skills or "commercial Dorsett." The use of supplementary materials seemed a necessity in most classes, since students usually had 10-15 minutes left in a class period after completing two machine-programmed lessons. Table 1 indicates that one of the lower-gain schools--namely, A--used no materials to supplement Dorsett and Basic Skills. In the other lower-gain school (C), every student used supplementary materials in each category during five or more class sessions.

In each of the higher-gain schools (E, F, and G) supplementary materials were widely used. For example, in School G students who had finished their Basic Skills or Dorsett lessons could select from a smorgasbord of materials: paperbacks, library books, retail catalogs, commercial reading lessons, etc. The teacher in School G attempted to learn each student's interests (e.g., cars, sewing) and brought to class articles and books relevant to those interests. She sometimes prepared cassette narratives and worksheets to accompany these individualized readings. The combination of Basic Skills lessons, Dorsett lessons, and supplementary materials (plus the teacher's own reward value for students) seems to have created a particularly potent educational environment. A few students, who had completed all of their assigned Basic Skills and Dorsett lessons, even attempted to "flunk" their Gates-MacGinitie posttest, hoping to remain in the ESAA class.

RECOMMENDATIONS

The following recommendations are of two types: (a) recommendations concerning the improvement of Component operation, and (b) recommendations concerning the re-funding of the ESAA Reading Component.

Recommendations for the Improvement of Reading Component Operation

1. A complete set of Basic Skills Curriculum lessons and commercial Dorsett lessons should be available to each ESAA teacher. While most ESAA teachers in 1973-74 had fairly complete sets of Basic Skills and commercial Dorsett materials, a number of teachers had gaps in their sets. In part, these gaps were due to the fact that the Basic Skills curriculum was not complete in 1973-74, and units were (and are) added when written. In the nonpublic schools, the small number of ESAA students did not warrant complete sets of materials in each building. Nevertheless, one or more additional complete sets of Basic Skills and Dorsett materials should be ordered for the combined nonpublic schools. The nonpublic schools should also be encouraged to develop a more efficient materials-sharing system. In addition, another set or two of materials for the public schools should also be ordered and kept in a central location, so that individual lessons can be loaned to schools having missing or damaged materials.

2. A full-time Minneapolis school employee is needed (a) to service the Dorsett machines in the ESAA Reading Component and (b) to maintain and distribute a central inventory of Basic Skills and commercial Dorsett lessons (see Recommendation 1). Even if no more machines are purchased, such full-time maintenance service seems essential.

3. Reading materials to supplement the Basic Skills and commercial Dorsett lessons should be made available to ESAA teachers. As discussed above, most students can easily complete two machine-programmed lessons during a single class-period, leaving 10-15 minutes available for other activities. When asked, "Do you think the ESAA Reading Program should be changed in any way next year in your school?", two-thirds of the ESAA teachers requested funds to purchase supplementary materials. Several of these teachers expressed a need for vocabulary materials. Two teachers felt that materials to teach writing should be incorporated into the ESAA program. Most teachers requesting materials want paperbacks, magazines, reading and word games, etc., that would encourage recreational reading by students. The ESAA teachers are generally united in their support of the Basic Skills and Dorsett materials as the core

curricula of the Reading Component, but supplementary materials (which do not teach decoding) also seem necessary.

4. Supplementary materials (and newly developed Dorsett and Basic Skills lessons) should be reviewed to insure that they are multi-ethnic. Although the objectives of the Reading Component do not specify the use of multi-ethnic materials, the adoption of such materials whenever possible would serve one purpose of the Emergency School Aid Act; namely, the promotion of interracial understanding.

5. A time-delay feature should be added to the Dorsett machine, so that a student who answers incorrectly receives not only a 1-second "error tone," but also a 10 or 15-second "time-out" period when further responding cannot advance the filmstrip. Two ESAA teachers noted that the error tone is not aversive for many students. Such students sometimes carelessly pressed the machine's buttons until the correct answer was located, and so progressed through the lesson without reading it. A time delay for incorrect answering would make random button pressing much more unpleasant and therefore less frequent.

6. The Gates-MacGinitie Survey D, with separate machine-scorable answer sheet (Forms 1M, 2M, and 3M) should be the sole test used for future ESAA junior-high evaluations. Forms 1M, 2M, and 3M should be alternated to achieve a balanced pretest-posttest research design. Survey D, machine-scorable, seems to be the test of choice for the following reasons: (a) As discussed above, Survey D has a wider range than Primary C, and D scores are therefore less restricted by a "ceiling effect." (b) Seventh graders, who comprised nearly half of the ESAA students in 1973-74, already take Survey D, Form 2M, each September as part of the Minneapolis Schools' city-wide testing program. If these D scores are used for the ESAA evaluation, no ESAA seventh graders would need to be tested twice in the fall. (c) Machine-scored testing is less expensive than hand-scored, since the test booklets can be re-used. (d) Several ESAA teachers have noted ironically that the machine-scorable D2M, with a separate answer sheet, is faster to score "by hand," with a template, than the hand-scored D2.

7. The ESAA Project staff should carefully consider the fact that minority students were over represented in the ESAA reading programs of some schools. In three schools the minority enrollment in ESAA classes approached 50%. In one of these schools the ESAA minority enrollment doubled

the rate of minority enrollment in the whole student body. ESAA Project staff should see that educational need is synthesized with the need for racial balance, so that unintended resegregation does not occur.

8. The ESAA reading teachers should more carefully screen incoming students to insure that students selected are those for whom the Reading Component is intended. Although the great majority of the 1973-74 ESAA students were well suited to the program, 7% had pretest comprehension scores above the specified upper limit of 6.0.

9. As in the past, minority persons should be encouraged to apply for positions in the Reading Component. Since no Indian teachers or aides were employed for the Reading Component in 1973-74, Indian Americans should be sought for some of the future staff vacancies.

10. Future evaluation of the Reading Component should include assessment of its long-term effect on the reading comprehension and reading habits of students after they have left the ESAA program. Such a follow-up of 1973-74 ESAA students would be useful both in making further improvements in the Reading Component and in documenting its importance.

Recommendations for the Re-Funding of the Reading Component

The evaluator believes the Reading Component should be continued. The Reading Component is a demonstrably effective program, having not only met, but surpassed, its stated objectives of improving comprehension among the poorest reading junior high students in Minneapolis.

REFERENCES

Clark, S. H. Basic Skills Centers of Minneapolis, 1971-72. Photoduplicated Report No. C-71-25. Research and Evaluation Department, Minneapolis Public Schools, Minneapolis, Minn., December 1972.

Clark, S. H. Basic Skills Centers of Minneapolis, 1972-73. Photoduplicated Report No. C-72-53. Research and Evaluation Department, Minneapolis Public Schools, Minneapolis, Minn., January 1974.

Dorsett Educational Systems, Inc. Reading program for Dorsett M-86 A-V Teaching Machine. Norman, Okla.: Dorsett Educational Systems, Inc., undated.

Emergency School Aid Act (Title VII of Public Law 92-318, the Education Amendments of 1972), U. S. 92nd Congress, approved June 23, 1972.

Gates, A. I., and MacGinitie, W. H. Gates-MacGinitie Reading Tests: Technical manual. New York: Teachers College Press, Columbia University, 1965.

Job Corps Program Development Office, Manpower Administration, U. S. Department of Labor. Job Corps Reading Program manual. Washington, D. C.: U. S. Government Printing Office, 1972.

Minneapolis Public Schools. Desegregation/integration, 1972-1975: Summary of proposals for consideration based on the 1970 Human Relations Guidelines. Photoduplicated paper. Minneapolis, Minn., March 1972.

Minneapolis Public Schools, Planning and Support Services. Pupil personnel sight count, 1973-74. Minneapolis, Minn.: Information Services Center, 1973.

Office of Planning, Development, and Federal Programs, Minneapolis Public Schools. Application for Emergency School Aid Act funds. Minneapolis, Minn., May 1973.

Minneapolis Public Schools

ESAA Reading Teacher Form

Your name: _____

Your school: _____

Instructions:

Please answer the questions on the following pages. Your answers will be used (a) to describe how the ESAA Project actually operates, (b) to estimate the Project's effectiveness in meeting objectives, and (c) to make recommendations for improving the Project.

Your answers are anonymous. The following code number will be used instead of your name to identify your answers:

		3	0	1		

This code, known only to the evaluator, will be used to compare the answers of all ESAA people at the same school. Names of individuals will not appear in any reports, and your answers will not be identified to anyone connected with your employment.

I do need this cover page with your name (a) to determine who has and has not answered the questionnaire and (b) to conduct any needed follow-up.

Do you have any questions?

Now, please remove this cover page and pass it in.

N=17
M=Mean
S.D.=Standard deviation
N.A.=No Answer

3/74
Form 3R

APPENDIX A (continued)

Minneapolis Public Schools
ESAA Reading Teacher Form

Contact person:

Paul Higgins, Project Evaluator
Tel. 348-6142 or 6140
Minneapolis Public Schools
807 N. E. Broadway
Minneapolis, MN 55413

Introductory remarks to Teacher: I have been employed by the Minneapolis Public Schools to help conduct the federally required evaluation of the ESAA Project. I would like you to answer a few questions about the ESAA Reading Program. I would also appreciate your suggestions for improvement of the ESAA Reading Program. Names of individuals will not appear in any reports, and your answers will not be identified to anyone connected with your employment.

(1-7) Do not fill in

1	2	3	4	5	6	7
		3	0	1		

Teacher's code number

(8) Sex:

4 1 Male

10 2 Female

(9) Race or ethnic group:

11 1 White American
2 2 Black American
0 3 Indian American
0 4 Spanish-surnamed American
0 5 Asian American
1 6 Other. Please specify: _____

(10-11) How many different ESAA reading classes did you teach in 1973-74?

M=4.4 S.D.= ± 1.2

(12-13) How many other classes (not ESAA reading classes) did you teach in 1973-74? Please describe subject content:

M=0.8
S.D.= ± 2.0

Please answer the following two questions concerning the separation of the Basic Skills Curriculum lessons from the "commercial Dorsett" lessons:

(14) Do you think Basic Skills Curriculum lessons should be used only with Objective I students (pretest comprehension of 3.9 or below)?

0 1 Yes
14 2 No

If you answered "No," please explain: _____

(15) Do you think "commercial Dorsett" lessons should be used only with Objective II students (pretest comprehension of 4.0 or above)?

2 1 Yes
12 2 No

If you answered "No," please explain: _____

(16) Did you use any "multi-ethnic" reading materials, designed to promote understanding of, and respect for, different racial and ethnic groups?

7 1 Yes
7 2 No

If your answer was "Yes," please describe the multi-ethnic materials:

(17) Do you think the ESAA Reading Program should be changed in any way next year in your school?

12 1 Yes
1 2 No
1 3 Uncertain

If you answered "Yes" or "Uncertain," please explain:

APPENDIX B

Minneapolis Public Schools

ESAA Reading Aide Form

Your name: _____

Your school: _____

Instructions:

Please answer the questions on the following pages. Your answers will be used (a) to describe how the ESAA Project actually operates, (b) to estimate the Project's effectiveness in meeting objectives, and (c) to make recommendations for improving the Project.

Your answers are anonymous. The following code number will be used instead of your name to identify your answers:

		4	0	1		

This code, known only to the evaluator, will be used to compare the answers of all ESAA people at the same school. Names of individuals will not appear in any reports, and your answers will not be identified to anyone connected with your employment.

I do need this cover page with your name (a) to determine who has and has not answered the questionnaire and (b) to conduct any needed follow-up.

Do you have any questions?

Now, please remove this cover page and pass it in.

N=17
M=Mean
S.D.=Standard deviation
N.A.=No Answer

3/74
Form 4P

APPENDIX B (continued)

Minneapolis Public Schools
ESAA Reading Aide Form

Contact person:

Paul Higgins, Project Evaluator
Tel. 348-6142 or 6140
Minneapolis Public Schools
807 N. E. Broadway
Minneapolis, MN 55413

Introductory remarks to Aide: I have been employed by the Minneapolis Public Schools to help conduct the federally required evaluation of the ESAA Project. I would like you to describe the role of the ESAA Reading Aide. I would also appreciate your suggestions for improvement of the ESAA Reading Program. Names of individuals will not appear in any reports, and your answers will not be identified to anyone connected with your employment.

(1-7) Do not fill in: 4 0 1 — Aide's code number

(8) Sex:

2 1 Male

15 2 Female

(9) Race or ethnic group:

15 1 White American

2 2 Black American

0 3 Indian American

0 4 Spanish-surnamed American

0 5 Asian American

0 6 Other. Please specify: _____

(10-11) How many different ESAA reading classes did you assist in 1973-74?

M=5.2 S.D.= ± 1.6

(12-13) How many other classes (not ESAA reading classes) did you assist in 1973-74? Please describe subject content: _____

M=0.3
S.D.= ± 0.8

(14) Do you now perform any duties that you feel you should not perform?

3 1 Yes

14 2 No

If you answered "Yes," please describe the activities:

(15) Are there duties you don't perform that you feel you should be performing as an ESAA Reading Aide? (Are there things you don't do that you should be doing?)

2 1 Yes

15 2 No

If you answered "Yes," please describe the activities:

(16) Do you think the ESAA Reading Program should be changed in any way next year in your school?

12 1 Yes

3 2 No

2 3 Uncertain

If you answered "Yes" or "Uncertain," please explain:

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Form 4R

Listed below are some activities Reading Aides might perform. For each activity please indicate: (a) Do you perform the activity? (b) How do you perform the activity? (c) What % of your total time do you spend on this activity?

Activity	Do you perform the activity?	How do you perform the activity? (Include any "tips" you would give to other Aides seeking improved reading by ESAA students.)	What % of your total time do you spend on this activity? (Round to nearest 5% if you prefer.) (27-28) M	S.D.
1. Passing out and collecting reading materials of all types (Basic Skills, Dorsett, others).	(17) 15 1 Yes 2 2 No		05 %	± 4%
2. Helping students to do their work	(18) 15 1 Yes 2 2 No		(29-30) 22 %	±19%
3. Passing out and monitoring tests and end-of-lesson mastery quizzes.	(19) 14 1 Yes 3 2 No		(31-32) 07 %	± 4%
4. Scoring tests, end-of-lesson mastery quizzes, and other written materials.	(20) 15 1 Yes 2 2 No		(33-34) 15 %	±11%
5. Giving feedback to students regarding their classroom performance (for example, praising, warning, telling students about their progress).	(21) 15 1 Yes 2 2 No		(35-36) 13 %	±12%
6. Maintaining up-to-date student records (for example, lessons completed, test scores, attendance).	(22) 16 1 Yes 1 2 No		(37-38) 10 %	± 7%
7. Organizing and storing the reading materials.	(23) 15 1 Yes 2 2 No		(39-40) 08 %	± 9%
8. Assisting the teacher in selecting and finding reading materials to supplement Basic Skills and Dorsett lessons.	(24) 9 1 Yes 7 2 No 1 NA		(41-42) 05 %	± 6%
9. Assisting the teacher in lesson planning.	(25) 11 1 Yes 6 2 No		(43-44) 08 %	±14%
10. Do you perform any other activities as an ESAA Reading Aide?	(26) 11 1 Yes 6 2 No	List these "other" activities:	(45-46) 07 %	± 8%
		Total	100%	

*After your first answers on this section, you may need to revise the %'s, so Total is 100%.

(47-79) Blank

(80) 1=Card number